

OverheadFlame Flame StabilizersPictures

- What 4 changes  
 - air balance  
 - fuel balance  
 - setup  
 - flame stabilizers

Where - turning vanes at tip  
 curved convoluted from inner to outer

Why - match axial + tangential velocities  
 of coal + PA / spin inner air | outer air flow

basis: swirl factor  
 recirculation parameter

(under shot somewhat  
 takes more overswirl for flame stability  
 than originally anticipated  
 UI - redesigned different curvature)

OverheadPurpose:

- 1.) O/S - sets ~~swirl factor~~ + adverse press gradient  
 to min sucking hot flue gas back into burner  
 - KNOW IT HAPPENS - based on inspection fly ash/sludging  
 1) min overheating  
 2) min burner life fires

- 2.) F/S flame stability  
 reduce severity of eyebrows  
 scanner

NOx  
 LOI  
 O<sub>2</sub>/CO

→ guarantees  
 4 changes

- 1) flame shape + 2" cut / uniformity

SCANNERS - ~~1~~ external spin

- 2) Temperatures improvements

2. stipulations 1. air flow  
 declarations 2. component

- 3) NOx + O/S cooling air

- 4) LOI No effect

- 5) eyebrows + severity

still problem perimeter loading

or improve

We feel can maintain ↑ boiler

↓ backplate temps

↓ cooling air flow slightly

↓ NOx ~~exhaust~~ levels

Due to flame stabilizers and other mods,

RESULTSOverheadOverhead

UNKNOWN - No physical inspection?  
 Mechanical Integrity?

We feel it works - still some problems to resolve

Overhead

- a) perimeter loading
- b) additional air balancing - interactions
- c) " fuel balancing "

4 test conditions

Recommended doing this → on Unit #1

- All 4 changes work

Why - only do 3 of 4 mods

relative small cost to overall project / insurance policy + anything else